

Fluctuating Fortunes of a Collective Enterprise: The Case of the Agroforestry Tree Seeds Association of Lantapan (ATSAL) in the Philippines

Delia Catacutan · Manuel Bertomeu ·
Lyndon Arbes · Caroline Duque · Novie Butra

Accepted: 10 June 2008 / Published online: 1 July 2008
© Steve Harrison, John Herbohn 2008

Abstract The Agroforestry Tree Seeds Association of Lantapan (ATSAL) in Bukidnon province of Mindanao, Philippines, was organized in 1998, facilitated by the World Agroforestry Centre (ICRAF). Farmers were trained on germplasm collection, processing and marketing of agroforestry tree seeds and seedlings. ATSAL has been marketing various tree seeds and seedlings with apparent success, and has provided training on seed collection and nursery management to farmers, government technicians, and workers from non-government organizations. This paper reports initial results of a continuing study to assess the effectiveness of ATSAL's marketing strategy, including group dynamics, and the issues and challenges the group faces. It was found that during the first 2 years, ATSAL's market share of highly demanded timber tree species grew rapidly, thus helping to disseminate widely these important species among farmers. ICRAF's technical back-up was an advantage, increasing the Association's market credibility. Subsequently, ATSAL extended its market to the central Philippines, but failed to meet the demand for seeds due to organizational limitations. Market competition exists, where a non-member was able to take a larger market share than was the group. Nonetheless, ATSAL has established its name as a viable community-based seed and seedling producer, maintaining a stronghold in local and regional markets. Collective action is important for smallholders to gain market access, but is unlikely

This paper is a revised version of CAPRI Working Paper 76, 'Collective Action and Property Rights', originally presented at the CAPRI Research Workshop on Collective Action and Market Access for Smallholders, October 2–5, 2006, Cali, Colombia. The working paper can be found online at <http://www.capri.cgiar.org/pdf/capriwp76.pdf>. The paper has been adapted and reproduced with permission from the International Food Policy Research Institute, www.ifpri.org.

D. Catacutan (✉) · L. Arbes · C. Duque · N. Butra
World Agroforestry Centre (ICRAF), Avocado St., Casisang, 8700 Malaybalay City, Philippines
e-mail: delia_icraf@yahoo.com

M. Bertomeu
World Agroforestry Centre, Leyte State University, Baybay, Leyte 6521, Philippines

to sustain sales. Facilitating smallholder collective action is essentially an arduous task, requiring the supporting agency to hold a firm grasp of market realities, to invest in the maintenance of collective action, to provide continuous technical back-up, and to ascertain the conditions that make collective action succeed.

Keywords Collective action · Niche marketing · Market facilitation · Agroforestry · Germplasm

Introduction

Collective action is seen in many community-level efforts in agriculture and natural resource management, including technology dissemination, promotion and protection of resource rights, and accessing information of new technologies, credit and marketing. In the context of a small-scale collective, the direction of its actions generally emanate from the economic and social benefits that members can obtain from their investments (Swallow et al. 2001). Farmers are persuaded to organize themselves when there are opportunities to improve their farms and the economic welfare of their family. Moreover, they work together to produce mutual benefit for the group when the return is sufficient to cover their individual costs. These requirements involve high levels of trust, commitment and cooperation, which form the basis of social capital (Knox-McCulloch et al. 1998; Meizen-Dick et al. 2004). Viewed in these terms, collective action is a positive consequence of social capital.

Conflicts within collectives can arise if the distribution of responsibilities and collective benefits is not equitable. Even if bounded by a shared goal, the competition of individual and common interests is still prevalent in any collective (Ostrom 1990; Swallow et al. 2001), because members can further act in their individual interest while devoting few resources for their common interest. Olson (1971) observed that some members who see no incentive to cooperate actively take advantage of other members by making them carry most of the tasks. Leaders often bear a large part of these costs because they have the resources and capabilities while other members opt for a free rider strategy. Thus reaching the limits of compatibility within the collective is possible, which may result in its collapse. Effective feedback and communication among members is highly important to repair, maintain or enhance collective action.

Collective marketing facilitates meeting market demand, reduces the costs of getting products to the market and improves the bargaining power of farmers (Agarwal 1994; Knox-McCulloch et al. 1998; Johnson et al. 2002). This implies competitive advantage for participants, but collective marketing is not likely to be enough to allow smallholders to take full advantage of market opportunity. Being attentive to market signals and opportunities is one important consideration, and this is something external organizations can do for collective action, because they can link farmers to wider economic networks (Swallow et al. 2001). Ultimately, the success and sustainability of collective marketing is a function of not only the supply and demand of produce, but also the coordinated actions of individual members and the support from external organizations. Other important determinants

for success include clearly bounded goals, clear sets of rules and obligations, monitoring, commercial activities, a mechanism for conflict management, self-reliance and autonomy, and sound institutional structure and governance (Ostrom 1990; Stockbridge et al. 2003).

This paper draws on the experiences of the Agroforestry Tree Seeds Association of Lantapan (ATSAL), in Bukidnon province in the Philippines. The World Agroforestry Centre (ICRAF) facilitated collective action of smallholders to improve their access to markets for agroforestry seeds and seedlings, so as to diffuse high quality planting materials of agroforestry tree species, with the ultimate goal of expanding adoption and improving the productivity of agroforestry systems, and increasing incomes.

The Case of ATSAL in the Manupali Watershed, Bukidnon Province in the Southern Philippines

The Philippines is one of the most deforested countries of the tropical world. In the early 1900s, 70% of its land area (or 21 M ha) was covered with forests (Garrity et al. 1993; Liu et al. 1993). However, at present only about 6 M ha of forested land remain (FMB 2004). Extensive reforestation efforts began in the early 1970s with the implementation of numerous government-driven social forestry programs. However, as discussed by Garrity et al. (1993) and Pasicolan (1996), after more than three decades of support, government-sponsored reforestation has largely been ineffective. With the country's external debts, and in view of these results, borrowing money at the national level to plant trees is apparently not a financially sound option.

In the Philippines, the bulk of tree seeds produced is used by individuals farmers, industrial forest plantations, non-government and national government agencies (NGOs and NGAs) involved in reforestation, and local government units (LGUs) with municipal-level tree planting programs. Other users of tree seeds, though in smaller amounts, include universities and research institutes. As government agencies and some leading NGOs have recently set up ambitious targets for reforestation (DENR 1998; Haribon Foundation 2005),¹ and as farmers are gradually transforming large areas of grasslands into productive agroforestry systems (due to strong market demand for tree commodities), there has been a large and increasing demand for seeds and seedlings of a diverse range of tree species (mainly fruit and timber trees).²

Since 1994, ICRAF lead the biodiversity consortium of the USAID-funded Collaborative Research Support Project on Sustainable Agriculture and Natural Resource Management (SANREM-CRSP) in the Philippines. The project site was Lantapan, an upland municipality that is wholly contained in the Manupali

¹ The target is to reforest an average of 20,000 ha per year.

² With 2,500 trees/ha required and considering 20% mortality, 60 M trees seedlings would be required annually. With an average price per seedling for forest trees ranging from 3 to 5 PhP per seedling, this would require seedlings to the value of \$3.5 to \$5.7 M for government reforestation alone.

watershed, Bukidnon province, in Mindanao in southern Philippines. Lantapan is characterized by high-rainfall, high elevation (average 600 masl), steep slopes and nutrient-poor soils. It is bordered by the Manupali River in the south, and a major protected area, the Mt. Kitanglad Range Natural Park (MKNRP), in the north. Several sub-watersheds drain from Mt. Kitanglad Range across the extensively cultivated lands to the Manupali River. The river runs into a network of irrigation canals operated by the Manupali River Irrigation System (MANRIS) (Coxhead and Buenavista 2001; Catacutan 2005).

Given the unique conditions of Lantapan, ICRAF's research focused on developing technical and institutional innovations for integrated watershed management, with emphasis on understanding the elements of a social contract between buffer-zone communities and other stakeholders concerned with the protection of the resources of MKNRP (Garritty et al. 2002; Catacutan 2005). On-farm trials were set up to evaluate the growth performance of various agroforestry tree species (listed in Table 1) across landscape positions in the watershed. As part of a participatory research strategy, farmer-cooperators were involved in the selection of tree species to be tested, and were trained in seed collection and processing, seedling production techniques and nursery establishment.

In about a year of working with farmers in nurseries and on farms to enhance the diversity and improve the management of tree-based production systems, it became obvious that the supply of planting materials to farmers was insufficient. Commonly, small quantities of seeds of locally-grown trees were collected by and exchanged among a few farmers, and a few others purchased seeds or seedlings within and outside Lantapan (Koffa and Garritty 2001). Recommended seed collection and handling methods were unknown to farmers. A case study conducted by Koffa and Roshetko (1999) to assess the seed collection, processing and diffusion practices of farmers in Lantapan revealed major knowledge gaps in standardized methods for seed collection. For instance, most farmers collected seed from only 1 to 5 trees, a practice that may reduce, in the short or medium term, the

Table 1 Tree species evaluated in Lantapan (1998)

Scientific name	Common name
<i>Acacia aulacocarpa</i>	Aulacocarpa
<i>Acacia auriculiformis</i>	Auriculiformis
<i>Acacia crassicaarpa</i>	Crassicaarpa
<i>Acacia mangium</i>	Mangium
<i>Albizia lebbbeckoides</i>	Black wattle
<i>Eucalyptus deglupta</i>	Bagras
<i>Eucalyptus pellita</i>	Pellita
<i>Eucalyptus robusta</i>	Robusta
<i>Eucalyptus torelliana</i>	Torelliana
<i>Eucalyptus urophylla</i>	Urophylla
<i>Gmelina arborea</i>	Gmelina
<i>Grevillea robusta</i>	Grevillea
<i>Maesopsis eminii</i>	Musizi

productivity due to inbreeding (Koffa and Garrity 2001). The findings of this study were presented at a workshop attended by 15 farmer-cooperators from the on-farm trials and local seed collectors with an interest in learning about seed technology. After the workshop, the farmers decided, with facilitation from ICRAF, to organize themselves into an association of seed producers that is now known as ATSAL (Koffa and Garrity 2001).

ATSAL's Objectives and Organizational Structure

The main of purpose of ATSAL members was to harness collective will, skills, talents and efforts in meeting five key objectives: (1) to collect and process high quality tree seeds to meet planting requirements for members' tree farming and for the markets; (2) to establish, develop and manage tree nurseries and plantations efficiently and cost-effectively; (3) to harvest, process and market logs and other plantation products and to provide wood for home consumption; (4) to train other farmers in Lantapan and beyond³ in collection and handling of tree seeds, and the establishment and management of tree nurseries and plantations; and (5) to conserve steeply-sloping farmland through the application of low-cost, efficient soil erosion control measures, employing independent or combined effects of grasses, shrubs and trees.

In subsequent organizational meetings, members agreed that high quality agroforestry tree seeds and seedlings would be their main product. The Association also developed a protocol for maintaining high product quality such as proper seed collection and processing, seed germination trials, and seed expiry specification. ATSAL also established a 'money back guarantee' scheme of seeds sold,⁴ and a seed germination demonstration to attract the market. Within one year, ATSAL's membership increased from 15 to 40 farmers, of which 95% were male, with nearly half aged under 45 years (Table 2).

ATSAL is a heterogeneous group with 36% lowland migrant members (Visayan), 28% indigenous people (Talaandig tribe), and the remainder belonging to other ethnic groups. About 54% of members have attended (though not all have completed) elementary education, and farming is the major source of income for 82%. Most ATSAL members had annual incomes of less than 75,000 PhP (about US\$ 1500). When farmers were asked about the reasons for their participation in ATSAL, the most common response (45%) was to gain more knowledge about tree farming, followed by their interest to increase household income (Table 3). Notably, few stated their reason as learning to market seeds and trees. Perhaps, some members were interested in tree seeds only for their own use, or were simply not keen on marketing per se.

The majority of ATSAL members were land owners (70%), of which 54% have less than 3 ha of land. Portions of their farms were planted with various fruit and timber tree species (Table 4), arranged in blocks or aligned on contours and on farm

³ The training was targeted at municipalities in Mindanao and the Visayas region.

⁴ Seeds that do not germinate can be returned, or changed with newer stocks within the germination period.

Table 2 Socio-economic profile of ATSAL members ($n = 39$; figures in percentages)

	29–44 years	45–59 years	60–75 years
Age	46	36	18
Ethnicity	Talaandig	Visayan	Other
	28	36	36
Gender	Female		Male
	5		95
Education	Elementary	High School	College
	54	16	30
Employment	Farmer	Private employee	Government employee
	82	3	15
Farm size	<3 ha	3–6 ha	>6 ha
	54.2	31.4	14.2
Land tenure	Owned	Rented	Other
	70	10	20

Table 3 Reasons for joining ATSAL in Lantapan, Bukidnon ($n = 39$)

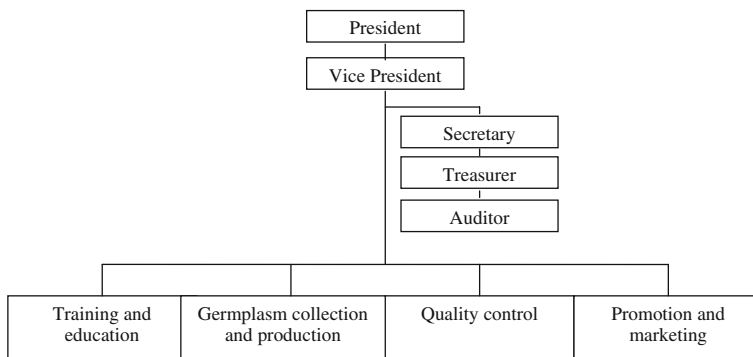
Reason	Relative frequency (%)
To gain additional knowledge on tree farming	45
To increase farm income	21
To gain additional knowledge on soil and water conservation technologies	9
To help strengthen the group	5
To protect the environment by planting trees	5
Encouraged by the cooperation in group activities (e.g. tree planting)	5
To learn how to collect seeds	5
To learn how to propagate seedlings	2.5
To learn how to market trees	2.5

boundaries. In general, ownership of planted trees and the seed production area is private.

The officers of ATSAL were the president, vice-president, secretary and treasurer (Fig. 1). There were four committees created, namely: training and education; seed quality control; promotion and marketing; and germplasm production. The training and education committee was linked to ICRAF's training program, in order for the members to readily access training on seed collection and handling, seedling production, plantation establishment and management. During its first year of operation, meetings were held on a weekly basis to train members on seed production technologies. Farmers experimented with seed propagation techniques, and with various fruit and timber tree species. Clearly, accessing training on seed technology was an outright benefit of the collective.

Table 4 Fruit and timber trees planted by ATSAL in Lantapan, Bukidnon, in 2003

Timber trees species		Fruit trees species
Exotic species	Indigenous species	
Bagras (<i>Eucalyptus deglupta</i>)	Agoho (<i>Casuarina equisetifolia</i>)	Durian (<i>Durio zibethinus</i>)
Camaldolensis (<i>Eucalyptus camaldolensis</i>)	Apitong (<i>Dipterocarpus grandiflorus</i>)	Lanzones (<i>Lansium domesticum</i>)
Pellita (<i>Eucalyptus pellita</i>)	Lauan (<i>Shorea contorta</i>)	Rambutan (<i>Nephelium lappaceum</i>)
Robusta (<i>Eucalyptus robusta</i>)	Molave (<i>Vitex parviflora</i>)	Mango (<i>Mangifera indica</i>)
Torelliana (<i>Eucalyptus torelliana</i>)		Marang (<i>Artocarpus odoratissimus</i>)
Black wattle (<i>Acacia lebeckoides</i>)		Jackfruit (<i>Artocarpus heterophyllus</i>)
Mangium (<i>Acacia mangium</i>)		
Saligna (<i>Acacia saligna</i>)		
Falcata (<i>albizia falcataria</i>)		
Gmelina (<i>Gmelina arborea</i>)		
Grandis or “Teak” (<i>Tectona grandis</i>)		
Grevillea (<i>Grevillea robusta</i>)		
Mahogany (<i>Swietenia macrophylla</i>)		
Musizi (<i>Maesopsis eminii</i>)		

**Fig. 1** ATSAL's organizational structure

The president, a retired engineer and former village head (*barangay captain*), played an important leadership role. His position in society was advantageous, and because of his educational attainment, he was able to develop contacts and relate to clients easily. The committees on quality control and promotion and marketing were led by one experienced seed collector and business-oriented farmer who had worked in a major reforestation project in Lantapan in the 1980s. He was knowledgeable and enthusiastic in his marketing role. His committee was responsible in ensuring

‘quality standards’ and marketing ATSAL’s products. On the other hand, members of the germplasm collection and production committee ensured continuous supply of various tree seeds.

As a way of helping ATSAL to break into the seed market, ICRAF introduced the Association to various NGAs, NGOs, LGUs, and research and development organizations at the local, regional and international levels. ATSAL was also tapped by ICRAF to train a multitude of LGU and NGO technicians, practitioners, students and farmers on seed collection and processing, seedling production and nursery establishment. As a result, ATSAL was able to raise its profile, informally creating a *brand* for its products, and establishing its reputation as a viable community-based smallholder seed and seedling producer. In this process, the role of ICRAF was extremely important not only in providing technical back-up, but also as a broker for ATSAL to establish a niche in the market. ICRAF’s main objective was to train farmers to raise and diffuse high quality seeds of various agroforestry tree species, but without hesitation it also took a brokering role for ATSAL. Primarily, market information was accessed by ATSAL through ICRAF, which sought market information and promoted ATSAL to government and NGO buyers; hence many of ATSAL’s customers were established through ICRAF (see Fig. 2). In some cases, ATSAL’s marketing officer accessed market information by actively participating in training sessions, farm visits and conferences. Intermittently, some members accessed market information from local middlemen, these agents being able to access information directly from government and NGO buyers.

There were three marketing channels of ATSAL’s products (Fig. 3). Market channel 1 was adopted by ATSAL as its main marketing strategy, which mainly involved the Marketing Officer who maintained contact with buyers, collecting the seeds or seedlings from the members to meet bulk orders and delivers them to buyers. In some cases, the Marketing Officer had to travel to other provinces and regions to market their products, requiring additional transaction costs. Subsequently, two further market channels evolved. Market channel 2 involved members selling seeds and seedlings through a local middleman, while market channel 3

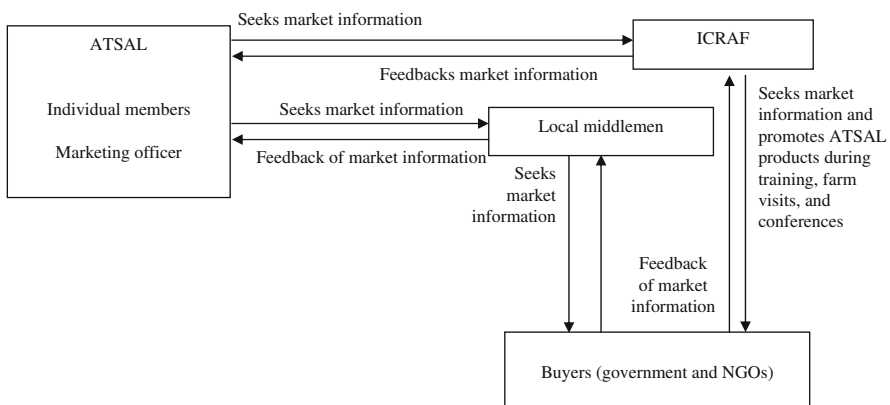


Fig. 2 Flow of market information

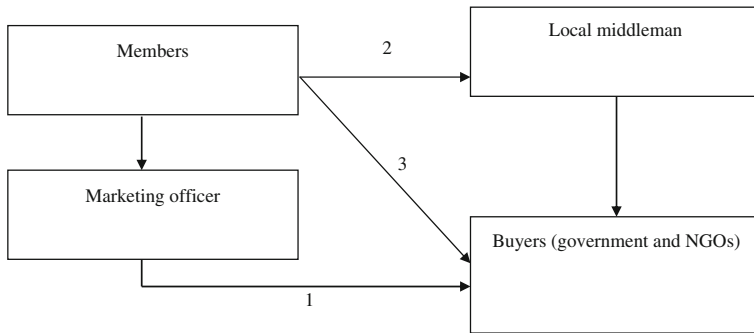


Fig. 3 Market channels of ATSAL products

involved members selling seeds and seedlings directly to buyers. The second and third marketing channels, however, do not seem to conform to collective marketing. Usually, this happened when farmer groups that came to train in Lantapan immediately bought seeds and seedlings from the members visited. Later, some members individually developed contacts with potential buyers. While direct selling could be a manifestation of ‘improved capacity’ on the part of individual members, this courted conflict within the Association, particularly the Marketing Officer. Clearly, there was competition between members and the Association as a whole—this is a common fate of collective action, where members turn away to accumulate more benefits for themselves than for the collective.

Initially, ATSAL established a benefit-sharing scheme for sales made through the Marketing Officer. Ten percent of the gross sales revenue was collected for the Association’s general fund, earmarked for capacity building activities, meetings and operating costs. Fifteen percent went to the Marketing Officer as an incentive for making the sale. Finally, the seed collector (member) received 75% of the gross sales revenue. There was thus a clear economic benefit for participating in the collective, in addition to accessing training on seed technologies. However, this sharing scheme did not endure, with members opting for marketing channels 2 and 3. As a compromise, members who adopted channels 2 and 3 were required to report their sales to the Association’s treasurer and remit 10% of their gross sales revenue for the Association’s general fund. The President disclosed that a verbal agreement was reached between the Association and the individual seller that the latter could continue to use ‘ATSAL’ as a brand to market seeds, provided its quality standards were observed. Apparently, ATSAL’s rules were less stringent, or the officers were simply sympathetic or did not want to control the opportunities of individual members to enter the market. This compromise helped to maintain the relationship between ATSAL officers and the members.

Benefits, Group Dynamics and Market Competition

ATSAL operated smoothly during its first two years of existence (1998–2000). The Association specialized in the production of high quality seeds of mostly exotic

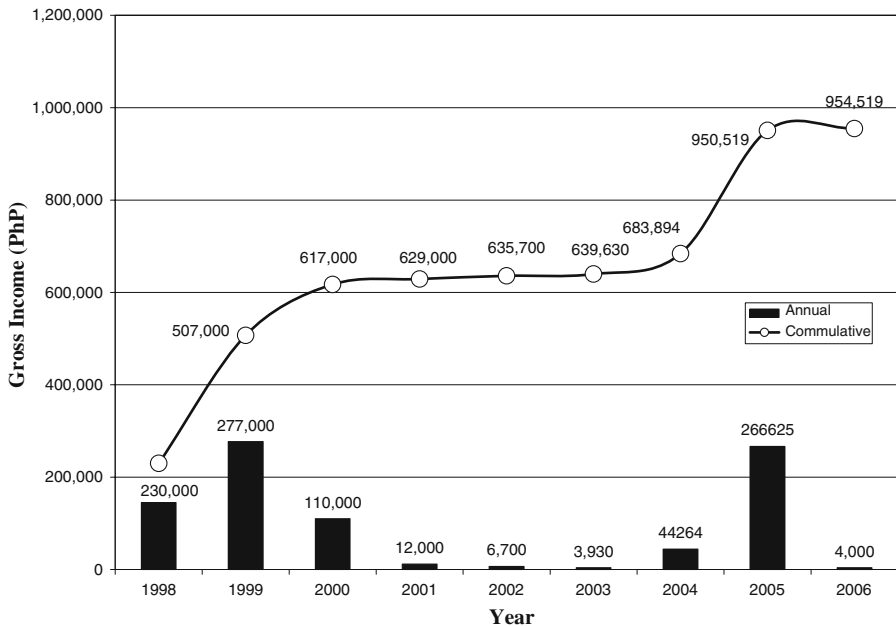


Fig. 4 ATSAL's gross income (1998 to mid-2006)

timber tree species, and was able to create a market niche primarily for NGO, NGA and LGU customers. From 1998 to mid-2006, the reported cumulative sales value of various agroforestry seeds was more than 954,000 PhP (US \$22,000), suggesting a substantial increase in farmers' income (Fig. 4). In the Philippines, this record was unprecedented for a smallholder collective. The increasing sales during the first 2 years were attributed to ATSAL's 'prepared' market (buyers that had come to Lantapan). For members, this was favorable because the transactions were negotiated locally, with almost no costs involved. The leadership by ATSAL's President and the expertise of the Marketing Officer were seen to have contributed to this remarkable growth. Apparently, ATSAL was effective at this scale of the market.

The top-selling tree species for seed sales was *Maesopsis eminii* (31% of cumulative revenue), followed by assorted leguminous forage species (27%), and eucalypt species (Table 5). The seeds were dispersed in Mindanao and in the Visayas region, but some members also mentioned that there were unreported sales from buyers in the Luzon, indicating a national market. In 2000, ATSAL also sold seeds of *Tithonia diversifolia* to one NGO in Nairobi, Kenya, mediated by ICRAF.

By 2000, ATSAL had started to expand its market outside of Lantapan, particularly into central Philippines, with initial success, but later failed to meet the demand for seeds and the logistical requirements for transporting seedlings. The transaction cost involved with external customers was a burden for ATSAL. The sales of seeds followed an S-pattern, increasing in the first two years and declining in 2000 and rising only in 2005 (Fig. 4). This pattern could be attributed to three main factors.

Table 5 ATSAL's top selling agroforestry seeds

Agroforestry tree species	Share of sales (%)
Musizi (<i>Maesopsis eminii</i>)	31
Assorted forage	27
Torelliana (<i>Eucalyptus torelliana</i>)	9
Gmelina (<i>Gmelina arborea</i>)	7
Black wattle (<i>Acacia lebbeckoides</i>)	7
Deglupta (<i>Eucalyptus deglupta</i>)	6
Robusta (<i>Eucalyptus robusta</i>)	4
Others	9

Undisclosed sales transactions. Some members that opted for market channels 2 and 3 were reportedly hiding their transactions, because they were reluctant to share their proceeds to the Association, indicating a competition between self-interest and collective good. It was also possible that the members were losing confidence due to alleged lack of transparency of transactions negotiated outside Lantapan. Some members also complained on high transaction costs involved in marketing seeds and seedlings outside the municipality. The loss of trust in this case diminished social capital, consequently deteriorating collective action. Some members also mentioned that the officers were less stringent in collecting the fees as agreed in the benefit-sharing scheme. All these, suggest a negative group dynamics or weak governance.

Loss of leadership and facilitation. ATSAL's marketing operation had started to decline in mid-2001 when the President left to work overseas and the Marketing Officer suffered ill-health problems. By then, the Association seldom had meetings, and the agreed marketing strategy was no longer observed. Consequently, other officers and members became inactive—some older members were ill, others were simply disinterested, and a number were employed outside Lantapan. The lack of effective leadership led the Association to become inoperative. At about the same time, ICRAF's facilitation declined due to a change in the Centre's focus.

Emergence of market competition. Partly due to ATSAL's limited activities, a non-member but enterprising farmer started to produce and market seeds and seedlings, and market competition emerged. He was able to establish market links outside of Lantapan, and with more resources, was able to meet the logistical requirements in marketing seeds and seedlings, including packaging and delivery. He also developed a farmer training centre in Lantapan. This strategy was effective, locking-in the potential customers of ATSAL. Consequently, the members became more active in marketing their seeds through this farmer who acted as their middleman. To some extent, he was associated with ATSAL because he was a friend to many of its members, and informally took the role of ATSAL's Marketing Officer, who was ill at that time. On a positive note, ATSAL has paved the way for other enterprising farmers to break into the market. The reputation of the collective in this case, opened up more opportunities for the community.

By 2001, the Landcare Association (a conservation group also facilitated by ICRAF) had started selling seeds and seedlings to the same customers as ATSAL. To avoid conflict arising from competition, ATSAL members decided to revisit

their marketing strategy in conjunction with Landcare, and eventually affiliated with the municipality-wide Landcare Association. This move was seen to be advantageous for both groups, creating a larger collective. This revitalized ATSAL to some extent, leading to their registration with the Philippines' Securities Exchange Commission (SEC) in 2003. Further, ATSAL enlisted a network of nursery operators in Mindanao to access the wider market, but with little success; it was unable to fix its organizational problems, the majority of the officers remained inactive and only a few members had sufficient seeds and seedlings. Organizational growth was thus hampered by poor leadership of ATSAL officers.

As a collective, ATSAL was unprepared to bear the costs of competition in large-scale markets. However, the absence of collective marketing opened up opportunities for business-oriented members to market their products directly to buyers. By using ATSAL as a collective name and brand, individual members were able to break into the market, and helped to maintain ATSAL's presence in the market. This is a natural course in the context of free enterprise, especially if only a few entrepreneurial farmers are being trained on marketing, but in this situation, resource-poor farmers will remain starved of market opportunities. Hence, despite the potential trajectory of collective action to disperse with good intention and with net positive outcomes, there is ample scope to strengthen collective action by poor smallholders, and for the collective to thrive in the free market; effective group leadership and some facilitation are essential for collective efforts to succeed.

In January 2005, the first President of ATSAL who had returned to Lantapan presided over a meeting with the members, and a new set of officer bearers were elected. The waning Association analyzed their problems and identified the elements of an effective marketing strategy, including: (1) continuous training on seed technologies; (2) employing a seed quality certification process among its members (for fruit but not timber trees); (3) diversification of products including sawn timber and small wooden furniture; and (4) participation in training sessions, farm visits and conferences organized by ICRAF and its partners. The sharp increase of sales in 2005 (Fig. 4) could be attributed to the revitalized collective. Although, its marketing operations remained concentrated within the locality, regional customers have continued buying ATSAL's seeds.⁵ ATSAL's popularity is generally maintained within its established market, despite fluctuating performance. Apparently, the slack in collective marketing did not mean a collapse of the group, or of the collective spirit, but was a manifestation of weak organizational structure and poor governance.

Collective Action for Effective Niche Marketing

Niche marketing is about specializing in a particular product to satisfy a specific market segment. To capitalize on a niche market is to find readily accessible customers, whose number is potentially growing, and who are not attached to one

⁵ These regions include the central, southern and Caraga regions in Mindanao, and the Visayas region in Central Philippines.

established merchant. On this premise, an assessment of ATSAL was undertaken in terms of its competence to produce high quality products and its ability to deal collectively with niche marketing.

Although ATSAL is relatively small (not more than about 70 members), and much less sophisticated compared to commercial nurseries, it has demonstrated technical competence as producer of high quality seeds and seedlings of selected fruit and timber tree species. The group has specialized in production of high quality seeds and seedlings of agroforestry tree species by: (1) identifying seed trees within individual farms, where mother trees are marked for seed collection; (2) applying technically-sound seed processing techniques, including handling and storing; (3) standardizing quality of marketable seeds through seed germination tests; and (4) experimenting with various seedling propagation techniques. Viewed in these terms, ATSAL has a specialized product that can compete in the market. ATSAL has thus met the basic requirements for niche marketing by meeting customer satisfaction with high quality seeds and seedlings. The maintenance of product quality could be attributed to access to ICRAF's training and experimentation on various seed production technologies. A clear message is that, where smallholder collectives lack financial capital, technical competence is their only competitive advantage in the market. This implies, however, the need for an intermediary agency to provide continuous technical back-up, enabling smallholders to maintain high product quality.

From the foregoing discussion, the issue confronting ATSAL was neither the lack of technical competence to produce high quality seeds, nor the lack of a market *per se*, but its organizational weaknesses. For ATSAL, the timing of training and farm visits by various groups in Lantapan was propitious, giving them readily accessible customers, and creating for them a niche within this market segment. ATSAL's expansion into central Philippines was designed to increase the number of customers within the same market segment (NGA, NGO and LGU buyers). Despite organizational weaknesses and fluctuating performance, ATSAL has maintained a niche in this particular market segment, gained a stronghold in local and regional markets, created a brand, and made its name as a viable community-based seed and seedling producer. However, expansion to the wider market—e.g. at the national or international scale—will require organizational stability and efficiency. For such a smallholder collective, the odds to success at these scales of the market could be low, considering complex market forces, for which they have little or no control. The message is that, even if smallholder collectives are strong, their long-term success and integration into wider markets require more mediation and support from external organizations.

Discussion

The experience of the ATSAL reveals that smallholder farmers are not just active tree planters but they also produce, exchange among themselves, and supply to various users (such as the government officers and NGOs), large amounts of tree seeds for tree planting activities. Decentralized systems of tree seed production and

distribution are crucial to expand tree planting in degraded marginal lands. However, farmers who have formed into collectives are often faced with organizational drawbacks. Complex group dynamics, ineffective leadership, and lack of business skills are recurring issues that limit their potential share in the market, leading to the demise of collective action.

Collective action is important for smallholders to gain market access, but is unlikely to endure without effective leadership and some facilitation, thus requiring expenditures on organizational 'repairs and maintenance'. An intermediary agency with a broad network of partners to link the collective and technical experts on product quality improvement provides necessary support to smallholder collectives. As a smallholder collective, ATSAL's comparative advantage is its expertise in producing high quality tree seeds through technically sound seed technologies. Without such reputation, it would not have been possible to maintain ATSAL'S presence in the market. Technical competence is thus a key factor for a smallholder collective to maintain its market niche. With ICRAF's diminishing technical back-up to ATSAL, government extension agencies could provide technical support, and could also facilitate the formation of community-based tree seed producers similar to ATSAL. Organizational management within the collective is also an important issue; without rules and management procedures, collective action will most likely dissipate.

Since 1998, ATSAL has made its name, and is still popular within its market segment, although the long-term sustainability of the collective is seriously threatened by organizational weaknesses and diminishing technical support. This has to be addressed if ATSAL is expected to remain active in the market for the longer term. Finally, facilitating collective action for smallholders marketing products is essentially an arduous task, requiring the supporting agency to hold a firm grasp of market realities, invest in organizational maintenance, provide continuous technical back-up, and provide the conditions that make collective action succeed.

Acknowledgments The authors are grateful to the officers and members of ATSAL for sharing data and time during interviews, and to Dr. Samuel Koffa, International Consultant, for facilitating the establishment of ATSAL.

References

- Agarwal B (1994) *A field of one's own: Gender and land rights in South Asia*. Cambridge University Press, Cambridge
- Anderson J, Dillion J, Hardaker J (1977) *Agricultural decision analysis*. Iowa State University Press, Ames
- Asian Development Bank (1994) *Forestry sector study of the Philippines*. Asian Development Bank (ADB), Manila
- Catacutan D (2005) *Scaling up landcare in the Philippines: issues, methods and strategies*. PhD thesis, The University of Queensland, Brisbane
- Coxhead I, Buenavista G (2001) Implementing a participatory natural resources research program. In: Coxhead I, Buenavista G (eds) *Seeking sustainability: challenges of agricultural development and environmental management in a Philippine watershed*. PCARRD, Los Baños, pp 161–176

- DENR (Department of Environment, Natural Resources) (1998) Moving CBFM into the 21st century. DENR strategic action plan. A compilation of policies on Community-Based Forest Management (CBFM). Department of Environment and Natural Resources, Quezon City
- FMB (Forest Management Bureau) (1988) Natural Forest Resources of the Philippines. Philippine-German Forest Resources inventory project. Department of Environment and Natural Resources, Quezon City
- FMB (Forest Management Bureau) (2004) Forestry statistics (2003). Forest Management Bureau. Department of Environment and Natural Resources, Quezon City
- Garrity D, Agustin P (1995) Historical land use evolution in a tropical acid upland agroecosystem. *Agric Ecosyst Environ* 53(1):83–95. doi:[10.1016/0167-8809\(94\)00552-P](https://doi.org/10.1016/0167-8809(94)00552-P)
- Garrity D, Kummer D, Guiang E (1993) The upland ecosystem in the Philippines: alternatives for sustainable farming and forestry. National Academy Press, Washington
- Garrity DP, Amoroso VG, Koffa S, Catacutan D, Buenavista G, Fay P et al (2002) Integrated natural resource management on the poverty-protection interface in an Asian watershed. *Conserv Ecol*, 6(1), Art. 12. (online) URL: <http://www.consecol.org/vol6/iss1/art12>. Accessed 11/25/2006
- Gatarwa K, Place F (2005) Initiatives for rural development through collective action: the case of household participation in group activities in the highlands of Central Kenya. SP-PRCA working paper no. 43. IFPRI, Washington, DC
- Gomez A, Kelly D, Baril MTA (eds) (1998) Catalogue of conservation practices for agriculture on sloping land. Los Baños, Laguna, Philippines. SEAMEO SEARCA, Los Baños, Philippines
- Haribon Foundation (2005) Reforestation: a strategy for restoring our dying forests. Haribon policy paper no. 3. Haribon Foundation, Quezon City, Philippines
- Johnson N, Suarez R, Lundy M (2002) The importance of social capital in Columbian rural agro-enterprises. CAPRI working paper no. 26. IFPRI, Washington, DC
- Knox-McCulloch A, Meizen-Dick R, Hazell P (1998) Property rights, collective action and technologies for natural resource management: a conceptual framework. SP-PRCA working papers no. 1. IFPRI, Washington, DC
- Koffa S, Garrity D (2001) Grassroots empowerment and sustainability in the management of critical natural resources: the Agroforestry Tree Seed Association of Lantapan. In: Coxhead I, Buenavista G (eds) Seeking sustainability: challenges of agricultural development and environmental management in a Philippine watershed. PCARRD, Los Baños, pp 197–217
- Koffa S, Roshetko J (1999) Farmer-managed germplasm production diffusion pathways in Lantapan, Philippines. Paper presented at domestication of agroforestry trees in southeast Asia regional workshop, Yogyakarta, Indonesia
- Liu DS, Iverson LR, Brown S (1993) Rates and patterns of deforestation in the Philippines: application of geographic information system analysis. *For Ecol Manage* 57(1–4):1–16. doi:[10.1016/0378-1127\(93\)90158-J](https://doi.org/10.1016/0378-1127(93)90158-J)
- Meizen-Dick R, Gregorio M, McCarthy N (2004) Methods for studying collective action in rural development. SP-PRCA working papers no. 33. IFPRI, Washington, DC
- Mercado A, Garrity D (2000) The landcare approach: enhancing community participation in sustainable agriculture and natural resource management in the uplands. In: Cason K (ed) Cultivating community capital for sustainable natural resource management. SANREM-CRSP, Athens
- Olson M (1971) The logic of collective action: public goods and the theory of groups. Harvard University Press
- Ostrom E (1990) Governing the commons: the evolution of institutions for collective action. Cambridge University Press, Cambridge
- Pasicolan PN (1996) Tree growing on different grounds: an analysis of local participation in contract reforestation in the Philippines. PhD dissertation, Centre for Environmental Science Leiden University, The Netherlands
- Pasicolan PN, Calub A, Sajise PE (1996) The dynamics of grassland transformation in Salindangan, Ilagan, Isabela, Philippines. Imperata project paper 1996/10. Australian Centre for International Agricultural Research, Canberra
- Pretty J (2000) Participation and social capital formation in Natural Resource Management: achievements and lessons. In: International Landcare 2000 conference, Melbourne, Australia
- Schumacher E (1973) Small is beautiful: economics as if people mattered. Harper and Row, New York
- Simons A (1996) Delivery of improvement for agroforestry trees. In: Dieters M, Matheson M, Nickles D, Harwood C, Walker S (eds) Tree improvement for sustainable tropical forestry. Proceedings of QFRI-IUFRO conference held in Caloundra, Queensland, Australia 27 October–1 November 1996

- Sperling L, Scheidegger U, Buruhara R (1996) Designing sees systems with small farmers: principles derived from bean research in the Great Lakes region of Africa. Agricultural administration (research and extension) network paper no. 60. Overseas Development Institute, London
- Stockbridge M, Dorward A, Kydd J, Morrison J, Poole N (2003) Farmer organization for market access: international review. Briefing paper. Centre for Development and Poverty Reduction, Imperial College, London. <http://www.wye.ic.ac.uk/AgEcon/ADU/research/projects/farmorg/fosumjul.doc>. Accessed on 15 July 2006
- Swallow B, Garrity D, Noordwijk M (2001) The effects of scales, flows and filters on property rights and collective action in watershed management. SP-PRCA working papers no. 16. IFPRI, Washington, DC
- Utting P (ed) (2000) Forest policy and politics in the Philippines: the dynamics of participatory conservation. Ateneo de Manila University Press, Quezon City